

SYNCHRONIZATION TECHNIQUES IN  
A MULTITHREADED ENVIRONMENT

ABSTRACT OF THE DISCLOSURE

Various techniques for manipulating data using access states of memory, access control fields of pointers and operations, and exception raising and exception trapping in a multithreaded computer system. In particular, the techniques include synchronization support for a thread blocked in a word, demand evaluation of values, parallel access of multiple threads to a list, synchronized and unsynchronized access to a data buffer, use of forwarding to avoid checking for an end of a buffer, use of sentinel word to detect access past a data structure, concurrent access to a word of memory using different synchronization access modes, and use of trapping to detect access to restricted memory.